

**REMARKS**

The Advisory Action mailed August 23, 2007, indicates that, when entered, Applicant's amendments and remarks filed July 25, 2007, would place claims 1-8, 10, 12 and 14 in condition for allowance. Applicant respectfully requests entry and consideration of the amendments and remarks filed July 25, 2007, which have been expressly restated above and below for the Examiner's convenience.

With respect to entry and consideration of Applicant's response filed July 25, 2007, claims 1-8 and 10-15 are pending and currently under examination. Claims 10-15 have been withdrawn from prosecution as being drawn to a non-elected species. Applicants expressly request rejoinder of these claims upon allowance of a generic claim.

By the present communication, no claims have been added and claims 11, 13 and 15 have been canceled without prejudice as being drawn to a non-elected species. Applicants reserve the right to pursue these claims in a later filed application claiming the benefit of priority to this application. Claims 1, 2, and 6 have been amended to define Applicants' invention with greater particularity. Support for the amendments can be found throughout the application as filed. Support for the amendment to claim 1 directed to providing an output can be found at, for example, page 9, lines 9-18; page 19, lines 5-21 and page 26, lines 17 through page 27, line 2. Claim 6 has been amended to recite an output of interest. Support for the amendment can be found at, for example, page 11, lines 2-10. Claims 1, 2 and 6 also have been amended to correct various informalities. Support for the amendments can be found in these claims as filed. In addition, the specification at page 25 has been amended to delete an obvious typographical error. Accordingly, the amendments do not raise any issue of new matter.

In light of the Advisory Action's indication of allowable subject matter and the cancellation of claims 11, 13 and 15, Applicants respectfully request that the claims 1-8, 10, 12 and 14 proceed to issuance.

**Rejections Under 35 U.S.C. § 101**

Applicants respectfully traverse the rejection of claims 1-8 under 35 U.S.C. §101 as allegedly being directed to non-statutory subject matter. Acknowledging that the physical transformation is not necessary for subject matter to fall within the statutory criteria, the Examiner alleges that the claims otherwise fail to produce a useful, concrete and tangible result allegedly because they lack a specific result. The Examiner alleges that selecting a pathway common to a set of systemic pathways fails to provide a tangible result that is useful to one skilled in the art and concludes that no real-world result for an operational pathway is set forth.

Applicants respectfully submit that the claims are directed to a method of analyzing the production of metabolites of a biochemical reaction network which eliminates an internal reaction flux to produce an altered network and determines whether the eliminated reaction flux diminishes the network's capability to produce a metabolite output. While not conceding that the claims are directed to non-statutory patentable subject matter, Applicants have amended the claims to recite providing an output of the claimed determination to a user or computer memory as suggested by the Examiner. Therefore, the claims clearly recite both a physical transformation since an output is provided to a user or computer memory and a useful, concrete and tangible result since the output provides a measure of whether the referenced reaction sets diminish the capability of the network. Applicants respectfully submit that the claims as amended produce a useful, concrete and tangible result, and request withdrawal of the rejection.

**Rejections Under 35 U.S.C. § 112, Second Paragraph**

Applicants respectfully traverse the rejection of claims 1-8 under 35 U.S.C. §112, second paragraph, as allegedly being indefinite. The rejection of each claim is addressed in turn below.

The Office alleges that claim 1 lacks antecedent basis for the term "wherein the determined reaction sets" because the claim allegedly does not recite "a determined reaction set." Without acquiescing to the reasoning offered by the Office, and in order to expedite prosecution of the instant application, Applicants have amended claim 1 to provide proper antecedent basis

by reciting "...reaction fluxes determined to diminish...." Withdrawal of the rejection is respectfully requested.

The Office alleges that claim 2 lacks antecedent basis for the term "after determining the sets of reactions" because its base claim allegedly fails to recite this element. Without acquiescing to the reasoning offered by the Office, and in order to expedite prosecution of the instant application, Applicants have amended claim 2 to provide proper antecedent basis by reciting the amended language of claim 1. Withdrawal of the rejection is respectfully requested.

The Office alleges that claim 6 stands lacks antecedent basis for the term "the analyzed biochemical production network" because its base claim allegedly fails to recite this element. Without acquiescing to the reasoning offered by the Office, and in order to expedite prosecution of the instant application, Applicants have amended claim 6 to provide proper antecedent basis by reciting "said biochemical reaction network." Withdrawal of the rejection is respectfully requested.

### CONCLUSION

In summary, for the reasons set forth herein, Applicants respectfully submit that the claims clearly and patentably define the invention, and allowance of the claims is respectfully requested. If the Examiner would like to discuss any issues raised in the Office Action, the Examiner is encouraged to call the undersigned so that a prompt disposition of this application can be achieved.

The Commissioner is hereby authorized to charge \$635.00 as payment for the Petition for Two-Month Extension of Time fee (\$230.00) and Request for Continued Examination fee (\$405.00) to Deposit Account No. 07-1896. Additionally, the Commissioner is hereby authorized to charge any other fees that may be due in connection with the filing of this paper, or credit any overpayment to Deposit Account No. 07-1896, referencing the above-identified docket number.

Respectfully submitted,

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